

CLAIMS

1. A cleaning composition comprising :
  - a) a surfactant system,
  - b) an oxidoreductase with an  $\alpha/\beta$ -hydrolase fold and a catalytic triad consisting of the amino acid residues serine, histidine and aspartic acid,
  - c) a hydrogen peroxide source, and
  - d) an organic acid.
2. A cleaning composition according to claim 1 wherein said oxidoreductase is present at a level of from 0.0001% to 2%, preferably from 0.001% to 1%, more preferably from 0.005% to 0.1% pure enzyme by weight of total composition.
3. A cleaning composition according to claims 1 to 2 wherein said oxidoreductase is obtained from the strain *Serratia marcescens*.
4. A cleaning composition according to claims 1 to 3 wherein the organic acid is comprised at a level of from 0.1% to 50%, preferably from 0.5% to 40%, more preferably from 1% to 20% by weight of total composition.
5. A cleaning composition according to claims 1 to 4 wherein said organic acid is a monocarboxylic acid of the formula  $R_nH(n+1)COOH$  wherein  $n = 1-18$ , preferably 2-14, more preferably 2-9.
6. A cleaning composition according to claim 5 wherein said organic acid is selected from acetic acid, propionic acid, nonanoic acid, lauric acid and/or their corresponding sodium salts and/or mixture thereof.
7. A cleaning composition according to any of the preceding claims wherein said hydrogen peroxide source generates hydrogen peroxide in the wash solution at a level of from 0.0001 - 10 mmoles, preferably 0.0001 - 2 mmoles, more preferably 0.0001 - 0.3 mmoles.

8. A cleaning composition according to claim 7 wherein said level of hydrogen peroxide are maintained with a controlled releasing system.
9. A cleaning composition according to any of the preceding claims wherein said hydrogen peroxide source is selected from perborate and/or percarbonate.
10. A cleaning composition according to claims 1 to 8 wherein said hydrogen peroxide source is an enzymatic hydrogen peroxide generating system, preferably a glucose/glucose oxidase or lactate/lactate oxidase system.
11. A cleaning composition according to any of the preceding claims further comprising a detergent enzyme, preferably selected from cellulase, lipase, protease, amylase and/or mixtures thereof.
12. A cleaning composition according to any of the preceding claims further comprising another bleach system.
13. A cleaning composition according to claim 12 wherein said bleach system is a conventional activated bleach system.
14. A cleaning composition according to claim 13 wherein the bleaching agent is selected from perborate and/or percarbonate and the activator selected from tetraacetythylenediamine, nonanoyloxybenzenesulfonate and/or 3,5,-trimethylhexanoloxybenzenesulfonate.
15. A cleaning composition according to claim 12 wherein said bleach system is another enzymatic bleach system.
16. A cleaning composition according to claim 12 wherein said bleach system is a metallo catalyst based bleach system.
17. A cleaning composition according to claim 16 wherein said metallo catalyst is a transition metal complex of a macropolycyclic rigid ligand.

18. A cleaning composition according to claims 16-17 wherein said metallo catalyst is manganese.
19. A cleaning composition according to any of the preceding claims wherein said oxidoreductase is alkaline.
20. A cleaning composition according to any of the preceding claims which is in the form of an additive.
21. A fabric softening composition comprising
  - a) a surfactant system comprising a cationic surfactant comprising two long chain lengths,
  - b) an oxidoreductase with an  $\alpha/\beta$ -hydrolase fold and a catalytic triad consisting of the amino acid residues serine, histidine and aspartic acid,
  - c) a hydrogen peroxide source and
  - d) an organic acid.
22. Use of a composition according to any of the preceding claims for fabric cleaning and/or fabric stain removal and/or fabric whiteness maintenance and/or fabric softening and/or fabric colour appearance and/or fabric dye transfer inhibition.
23. Use of a cleaning composition according to claims 1 to 20 for cleaning hard surfaces such as floors, walls, bathroom tiles and the like.
24. Use of a cleaning composition according to claims 1 to 20 for hand and machine dishwashing.
25. Use of a cleaning composition according to claims 1 to 20 for oral and/or dental applications.
26. Use of a composition according to claims 1 to 21 for the sanitisation of the treated surfaces.

App. 3  
Abstract  
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